



71 15 / 13

SEQUENCE LISTING

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0120 Regulatable, Catalytically Active Nucleic Acids

0130 10139-3013

0140 04 393,113

0141 101-06-14

0150 01 212,097

0160 1000-06-15

0160 00

0170 Patent In version 3.1

0210 1

0211 1.0

0212 DNA

0213 Artificial Sequence

0210

0213 Engineered Aptazyme

0400 1

taattattacc cagggaattat atccagctgc atgtaccat gcagagcaga ctatatctcc 60

acttggttaa agcaagttgt ctatcgtttc gagtcacttg acctactcc ccaaagggat 120

agtcgttaa 129

0210 1

0211 1.01

0212 DNA

0213 Artificial Sequence

0210

0213 Engineered Aptazyme

04 00 2

ggttgagtat aaggtgactt ataattgttaa tctatctaaa cggggaacct ctctagtaga 60

caatcccggtg cttaaattata ccagcatcgt cttgatgcc ttggcagata aatgcctaac 120

gactatccct t 131

4310: 3
 4311: 75
 4312: DNA
 4313: Artificial Sequence

4320:
 4323: Engineered Aptazyme

4400: 3
 4401: gataataga ctcaatatag ggatcaacgc tcagtagatg tttctctggg ttaattgagg 60
 4402: acataggtata aggtg 75

4410: 4
 4411: 89
 4412: DNA
 4413: Artificial Sequence

4420:
 4423: Engineered Aptazyme

4430:
 4431: misc_feature
 4433: Engineered Sequence

4440: 4
 4441: attagctaca atatgaacta acgtagcata tgacgcaata ttaaaccgga gcattatggt 60
 4442: acgataaggt cgttaattctt accccggaa 89

4450: 5
 4451: 131
 4452: DNA
 4453: Artificial Sequence

4460:
 4463: Engineered Aptazyme

4470:
 4471: misc_feature
 4472: (77)..(77)
 4473: n=a,c,t, or g

4480:
 4481: misc_feature
 4482: (103)..(108)
 4483: n=a,c,t, or g

4490: 5
 4491: acctgagtat aaggtgaatt ataactagtaa totatctaaa cggggaacct ctctagtaga 60
 4492: caatcccggtg ctaaatnata ccagcatcgt cttgatgcc ttggcagnta aatgcctaac 120
 4493: gaatatccct t 131

<210> 6
 <211> 101
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Engineered Aptazyme

<230>
 <231> misc_feature
 <233> Engineered Aptazyme

<230>
 <231> misc_feature
 <233> Engineered Sequence

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 cagtaaggt cgttaatttt accccggaat tctatccagc t 101

<210> 7
 <211> 116
 <212> DNA
 <213> Artificial Sequence<220><223> Engineered Aptazyme

<230>
 <231> misc_feature
 <232> (37)..(37)
 <233> n=a, t, g, or c

<400> 7
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 nnnnnnnnnn nnnnnnnnnn nnnnnngagg ttaggtgect cgtgatgtcc agtcgc 116

<210> 8
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<230>
 <233> primer

<400> 8
 tttctataacg actcaactata 20

<210> 9
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>

4203 - primer
 4400 - 9
 ggaactggac atcaccgag 18

 4210 - 1
 4211 - 36
 4212 - DNA
 4213 - Artificial Sequence

 4220 -
 4223 - primer

 4400 - 10
 attatataag actcactata ggacctcggc gaaagc 36

 4210 - 11
 4211 - 60
 4212 - DNA
 4213 - Artificial Sequence

 4220 -
 4223 - competitor sequence

 4400 - 11
 gpyaauggau ccacaucuac gaauucgagu cgagaacugg ugcgaaugcg aguaaguuca 60
 cuuacagacu gaagaagcuu 80

 4210 - 12
 4211 - 82
 4212 - DNA
 4213 - Artificial Sequence

 4220 -
 4223 - competitive sequence

 4400 - 12
 gpyaauggau ccacaucuac gaauucguag cguagaguau gagagagcca aggucagguu 60
 caauccagac ugaacgaagc uu 82

 4210 - 13
 4211 - 80
 4212 - DNA
 4213 - Artificial Sequence

 4220 -
 4223 - competitive sequence

 4400 - 13
 gggaauggau ccacaucuac gaauucauca gggcuaaaga gugcagaguu acuuaguuca 60

cuocagacuu gaogaagcuu

80

4210 14

4211 211

4212 DNA

4213 Artificial Sequence

4220

4223 competitive sequence

4401 14

uacuaauaug auuuggucuc auuaaagauc acaaaauugcu ggaaacuccu uugaggcuag 60

uacuaucagc aaggaaguua acuaauaaug uuaaaaccuu cagagacuag acgugaucuu 120

uuaaagang cuugogggcu cuuaauagau aagguauagu ccaaaauugu auguaaaauac 180

uaaagacua aaaaaaauga aaucuuauagg g 211

4210 11

4211 30

4212 DNA

4213 Artificial Sequence

4220

4223 competitive sequence

4230

4231 misc_feature

4232 (17)..(56)

4233 n=a,c,t, or g

4400 15

gggaagggau ccacaucuac gaauucnnnn nnnnnnnnnn nnnnnnnnnn nnnnnuuca 60

cuocagacuu gaogaagcuu 80

4210 10

4211 112

4212 DNA

4213 Artificial Sequence

4220

4223 Parental P6 construct

4400 10

gootagatg aaggtgactt atacttgtaa tctatctaaa cggggaacct ctctagtaga 60

caatccogtg cttaaattgta ggaotgcccg ggttctacat aaatgcctaa cgactatccc 120

tt 122

4210 17

0211- 24
 0212- DNA
 0213- Artificial Sequence

 0220-
 0221- primer

 0400- 17
 taattctgt aatctatcta aacg 24

 0210- 18
 0211- 19
 0212- DNA
 0213- Artificial Sequence

 0220-
 0221- primer

 0400- 1-
 aacggaattc tatccagctg catg 24

 0210- 19
 0211- 24
 0212- DNA
 0213- Artificial Sequence

 0220-
 0221- oligonucleotide

 0400- 19
 acctcagtat aaggtgaatt ataattgtaa totatctaaa cggggaacct ctctagtaga 60

 caatcccttg cttaaattgct aagcactatc cttt 94

 0210- 20
 0211- 131
 0212- DNA
 0213- Artificial Sequence

 0220-
 0221- oligonucleotide

 0400- 10
 acctcagtat aaggtgaatt ataattgtaa totatctaaa cggggaacct ctctagtaga 60

 caatcccttg cttaaattata ccagcctcgt cttgatgcc ttggcagata aatgcctaac 120

 caatctcctt t 131

 0210- 21
 0211- 133
 0212- DNA
 0213- Artificial Sequence

4200-

4203- oligonucleotide

4400- 11

ggttagtat aaggtgaatt ataattgtaa totatatataa cgggggaacct ctctagtaga 60

caatcccttg cttaaattgat accagcatcg tcttgatgcc ctgggcagca taaatgccta 120

actataacc att 133

4210- 22

4211- 119

4212- DNA

4213- Artificial Sequence

4220-

4223- oligonucleotide

4400- 22

ggttagtat aaggtgaatt ataattgtaa totatatataa cgggggaacct ctctagtaga 60

caatcccttg cataaccagca togtcttgat gcccttgcca ggctaacaaga ctatccctt 120

4210- 23

4211- 129

4212- DNA

4213- Artificial Sequence

4220-

4223- oligonucleotide

4400- 23

ggttagtat aaggtgaatt ataattgtaa totatatataa cgggggaacct ctctagtaga 60

caatcccttg ctaaatatac cagcatcgtc ttgatgccct tggcagtaaa tgctaacaaga 120

ctatccctt 133

4210- 24

4211- 115

4212- DNA

4213- Artificial Sequence

4220-

4223- oligonucleotide

4400- 24

ggttagtat aaggtgaatt ataattgtaa totatatataa cgggggaacct ctctagtaga 60

caatccctta taccagcacc gtcttgatgc ccttggcagc taacgactat ccctt 115

4210- 25

04000- 28
gtaatctatc taaaaggggg accctctctag tagacaatcc cgtgctaaat tgataaccagc 60
atcgtcttga tggcattggc agcataaatg cctaaccgact atccctt 107

42180 29
 42181 107
 42182 DNA
 42183 Artificial Sequence

42184
 42185 oligonucleotide

4400 29
 gtaattctatc taaacgggga acctctctag tagacaatcc cgtgctaaat tgataccagc 60
 atcgtctttaa tgcctcttggc tgcataaatg cctaaccgact atccctt 107

42186 30
 42187 102
 42188 DNA
 42189 Artificial Sequence

42190
 42191 oligonucleotide

4400 30
 cccctgagtat aaggtgactt ataacttgtaa totatctaaa cggggaacct ctctagtaga 60
 caatcccgctg cttaaattagg atatgcttcg gcagaaggat aaatgcctaa cgactatccc 100
 ct 102

42192 31
 42193 104
 42194 DNA
 42195 Artificial Sequence

42196
 42197 oligonucleotide

4400 31
 ggcctgagtat aaggtgactt ataacttgtaa totatctaaa cggggaacct ctctagtaga 60
 caatcccgctg cttaaattgag gatatgcttc gccagaaggc ataaatgcct aacgactatc 100
 ccct 104

42198 32
 42199 37
 42200 DNA
 42201 Artificial Sequence

42202
 42203 primer

4400 32

dataatacga ctcaactataa tggcattacc gccttgt

37

42100 33
42110 26
42120 DNA
42130 Artificial Sequence

42200
42230 primer

44000 32
44010 tagctagact tagctacaat atgaac

26

44100 34
44110 18
44120 DNA
44130 Artificial Sequence

44200
44230 substrate

44900 34
44910 aaaaaa aaaaaaaaaa aaugcacu

28

45100 31
45110 1
45120 DNA
45130 Artificial Sequence

45200
45230 clone sequence cyt7-2

45300
45310 misc_feature
45320 (37)..(47)
45330 n=a, c, t, or g

44300 35
44310 cggagcag gagagacgtc cttggaggag caagggnnnn nnnnnnngtc ttacagtcag

60

5 61

45100 36
45110 54
45120 DNA
45130 Artificial Sequence

45200
45230 clone sequence cyt7-6

45300
45310 misc_feature
45320 (14)..(17)

4223> n=a,c,t, or g

4400> 36

cagagcattt aggnnnnaag ggtgactctt tagttaggct cccgtagtt tagg

54

4218> 37

4219> 51

4219> DNA

4219> Artificial Sequence

4220>

4219> clone sequence cyt7-1

4219>

4219> misc_feature

4219> (39)..(43)

4219> n=a, c, t, or g

4400> 37

cagagcattt agcgggcaag ggtgggatgt tgccttggn nngtcagtc tygcg

55

4218> 38

4219> 50

4219> DNA

4219> Artificial Sequence

4220>

4219> clone sequence cyt9-2

4400> 38

aggaaccccc agattgtgtc gggatgttat ggtcgttta ttgagattac

50

4218> 39

4219> 44

4219> DNA

4219> Artificial Sequence

4220>

4219> clone sequence cyt9-16

4400> 39

cagtaagttt atatccogga gctaggtgct tcttgtagac agttatggg

49

4218> 40

4219> 50

4219> DNA

4219> Artificial Sequence

4220>

4219> clone sequence cyt9-18

4400> 40

gcacacagca ctatattgct tggtcggagc gtttcgttta ttgagtttac

50

<210> 41
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> clone sequence lys11-2

<230>
<231> misc_feature
<232> (23)..(23)
<233> n=a, c, t, or g

<400> 41
taacgtctca tggctaaatt gcatgintg ctacaaatga tatgactaga 50

<210> 41
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> clone sequence lys11-3

<400> 41
tadccaagac ttggtgacc ggcagtcctt ctattaatga gatgacgaga 50

<210> 43
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> clone sequence lys11-28

<230>
<231> misc_feature
<232> (31)..(31)
<233> n=a, c, t, or g

<400> 43
taactccgcg acttaggaac gggctgtgga ntaaaaatga tatgacgaga 50

<210> 44
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> clone sequence lys11-6

<230>
<231> misc_feature

0202+ (32)..(32)
 0203+ nna, c, t, or g

 0400+ 44
 tttaaaacga gagaattggc agtaccgtgc tnggttcga gataacgaga 50

 0210+ 45
 0211+ 270
 0212+ RNA
 0213+ Bacteriophage T4 (wild type)

 0200+
 0203+ Group 1 theophylline-dependent (td) intron

 0400+ 45
 uuppguuuuu ugaggccaga guauaaggug acuuauacuu guaaucuauc uaaacgggga 60
 accucucuaag uagacaaucd cgugcuaaa uguaggacug gddcbacuaa aaugccuaac 120
 gacuaucucu uuggggagua gggucaagug acucgaaacg auagacaacu ugcuuaaga 180
 aguaggagau auagucucu cuagcuggug acaugcagcu ggauaiauu ccgggguaag 240
 auuaacgacd uaucugac acaaugcuac 270

 0210+ 46
 0211+ 67
 0212+ RNA
 0213+ Artificial Sequence

 0210+
 0213+ GpITH1P6.131 aptamer construct

 0400+ 46
 uaaaagggga accucucuaag uagacaaucd cgugcuaaa uauaccagca ucgucugau 60
 ggcuuuggca gaaaaaugcd ua 82

 0210+ 47
 0211+ 64
 0212+ RNA
 0213+ Artificial Sequence

 0200+
 0203+ GpITH1P6.131 aptamer construct

 0400+ 47
 uaaaagggga accucucuaag uagacaaucd cgugcuaaa ugauaccagc aucgucuaa 60
 ugccuuuygc agcauaaaug ccua 84

 0210+ 48
 0211+ 49

<212> RNA
 <213> Artificial Sequence

 <220>
 <223> portion of P6 region of the Group I ribozyme (Part I)

 <400> 45
 uuaaggpua accucucuag uagacaaucg cgugcuaaau 40

 <210> 45
 <211> 30
 <212> RNA
 <213> Artificial Sequence

 <220>
 <223> Anti-theophylline aptamer

 <400> 45
 auaacagcau cguucucaug ccuuuggcag 30

 <210> 30
 <211> 10
 <212> RNA
 <213> Artificial Sequence

 <220>
 <223> portion of P6 region of the Group I ribozyme (Part II)

 <400> 50
 uaaauagcuua 10

 <210> 51
 <211> 130
 <212> RNA
 <213> Artificial Sequence

 <220>
 <223> LI ligase Aptamaze construct

 <400> 51
 guacuuogpu ccagugcuag ugcacuagga cguucgacca uguggguccg cugccagcgg 60
 caauuggga ugcuaugcgg aaccuucaca ucuaagacag gagguaaggu gccucgugau 120
 guccagucuc 130

 <210> 51
 <211> 10
 <212> RNA
 <213> Artificial Sequence

 <220>
 <223> modified LI ligase Aptamaze construct (Part I)

4000 52
 ggaaccucggc gaaagc 16

4010 53
 4011 53
 4012 RNA
 4013 Artificial Sequence

4014
 4015 modified LI ligase Aptamaze construct (Part II)

4016 54
 gaggguaggu gccucgugau guccagucgc 30

4017 54
 4018 56
 4019 RNA
 4020 Artificial Sequence

4021
 4022 Ribozyme clone sequence cyt7-2

4023 54
 ggaaccucggc gaaagccgga agcaaggaga gaaguccuug gaggagcaag gggucuuaca 60
 caacagugagg uuaggugccu cgugaugucc agucgc 96

4024 55
 4025 71
 4026 RNA
 4027 Artificial Sequence

4028
 4029 FMN1P6 theophylline-dependent (td) intron

4030 55
 aaacgggga accucucuag uagacaauc cgugcuaaau uaggauaugc uucugcagaa 60
 ggaacaaagc cua 73

4031 56
 4032 75
 4033 RNA
 4034 Artificial Sequence

4035
 4036 FMN2P6 theophylline-dependent (td) intron

4037 56
 aaacgggga accucucuag uagacaauc cgugcuaaau uaggauaug cuucugcaga 60

aggcauaaaau gccua

75

4210> 57

4211> 45

4212> RNA

4213> Artificial Sequence

4220>

4223> B11 construct

4400> 57

uaaaaggggga accucucuag uagacaaucc cgugcuaaaau gccua

45

4210> 53

4211> 54

4212> RNA

4213> Artificial Sequence

4220>

4223> GpITH2P6 aptamer construct

4400> 57

uaaaaggggga accucucuag uagacaaucc cgugcuaaaau ugauaccagc aucgucuuga

60

uggcruaggc agcauaaaag ccua

84

4210> 53

4211> 73

4212> RNA

4213> Artificial Sequence

4220>

4223> GpITH3P6 aptamer construct

4400> 59

uaaaaggggga accucucuag uagacaaucc cgugcauacc agcaucgucu ugaugcccuu

60

ggcaggoria

70

4210> 60

4211> 60

4212> RNA

4213> Artificial Sequence

4220>

4223> GpITH4P6 aptamer construct

4400> 60

uaaaaggggga accucucuag uagacaaucc cgugcuaaaau auaccagcau cgucuucaug

60

ccciugggag uaaaugccua

80

62100 61
 62110 66
 62120 RNA
 62130 Artificial Sequence

 62200
 62230 GpITH5P6 aptamer construct

 64000 61
 UAAAGGGGGA ACCUCUCUAG UAGACAAUCC CGUAUACCAG CAUCGUCUUG AUGCCCUUG 60
 CAGGCUA 66

 62100 62
 62110 66
 62120 RNA
 62130 Artificial Sequence

 62200
 62230 GpITH6P6 aptamer construct

 64000 61
 UAAAGGGGGA ACCUCUCUAG UAGACAAUCC CGUGAUACCA GCAUCGUCUU GAUGCCCUUG 60
 GCAAGGCUA 68

 62100 63
 62110 66
 62120 RNA
 62130 Artificial Sequence

 62200
 62230 GpITH1P5 aptamer construct

 64000 63
 UAAAGGGGGA ACCUCUAUAC CAGCAUCGUC UUGAUGCCCU UGGCAGAGAC AAUCCCGUG 60
 UUAUUGUAG GAGUGCCCGG GUUCUACAUU AAUGCCUA 93

 62100 64
 62110 64
 62120 RNA
 62130 Artificial Sequence

 62200
 62230 GpITH2P5 aptamer construct

 64000 64
 UAAAGGGGGA ACCUAUACCA GCAUCGUCUU GAUGCCCUUG GCAGACAAUC CCUGCUAAA 60
 UUGIAGGACU GCCCGGGUUC UACAUAAAUG CCUA 94

 62100 65

42110 84
 42120 RNA
 42130 Artificial Sequence

42200
 42230 3MeX2P6 aptamer construct

44000 65
 uaaaaggggga accucucuag uagacaaucc cgugcuaaaau ugauaccagc aucgucuuga 60
 ugocuuuggc agcauaaaug ccua 84

42100 66
 42110 84
 42120 RNA
 42130 Artificial Sequence

42200
 42230 Th2P6.D aptamer construct

44000 66
 uaaaaggggga accucucuag uagacaaucc cgugcuaaaau ugauaccagc aucgucuuga 60
 ugocuuuggu ugcauaaaug ccua 84